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Low and Decreasing Self-Esteem During Adolescence Predict Adult Depression Two Decades Later

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Abstract

Previous studies revealed that low self-esteem is prospectively associated with depression. However, self-esteem has been shown to change over time. We thus hypothesized that not only level but also change in self-esteem affect depression. Using data from a 23-year longitudinal study (N = 1,527), we therefore examined the prospective effects of global and domain-specific self-esteem (physical attractiveness, academic competence) level and change on depressive symptoms two decades later. Self-esteem was assessed annually from age 12 to 16 and depression was assessed at age 16 and 35. Results from latent growth curve analyses demonstrated that both level and change in self-esteem served as predictors for adult depression. Individuals who entered adolescence with low self-esteem, and/or whose self-esteem declined further during the adolescent years were more likely to exhibit symptoms of depression two decades later as adults; this pattern held both for global and domain-specific self-esteem. These findings highlight the importance of adolescent self-esteem development for mental health outcomes in adulthood.

Keywords: Adolescent development; personality development; self-esteem; depression

Introduction

Self-esteem is relevant for a number of important personal and social life outcomes. For example, high self-esteem predicts closeness in romantic relationships, better job performance, and academic achievement (Judge & Bono, 2001; Marsh & Craven, 2006; Murray, 2005). In contrast, low self-esteem predicts a number of maladaptive outcomes such as delinquency, poor physical and psychological health, and limited economic prospects (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005; Orth, Robins & Widaman, 2012; Trzesniewski et al., 2006; Zimmerman, Copeland, Shope, & Dielman, 1997). However, little is known about the predictive effects of developmental *change* in self-esteem on long-term consequential outcomes. Addressing change above and beyond self-esteem baseline level as a predictor of life outcomes is crucial because research has demonstrated that the self and personality change over time (e.g., Mroczek & Little, 2006; Roberts, Walton, & Viechtbauer, 2006; Trzesniewski, Donnellan, & Robins, 2003) and that these changes exert predictive power for such important life outcomes as mortality (Mroczek & Spiro, 2007), substance abuse (Hampson, Tildesley, Andrews, Luckyx, & Mroczek, 2010) or self-rated health (Turiano, Pitzer, Armour, Karlamangla, Ryff, & Mroczek, 2012). We therefore tested whether change in self-esteem is related to depression, and whether the effects of self-esteem change are independent of self-esteem baseline level.

Global and Domain-Specific Self-Esteem

Self-esteem is best characterized as an individual's global evaluation of his or her overall worth as a person. Domain-specific self-esteem refers to an individual's evaluation of him or herself in a specific domain (Epstein, 1973; Harter, 1999; Shavelson, Hubner, & Stanton, 1976). For this study, we were particularly interested in global self-esteem and in adolescents' self-evaluations in the domains of physical appearance and academic competence. These two domains are highly significant for the adolescent years because they reflect two central challenges confronting the developing adolescent – initiating romantic relationships and succeeding in school. For example, it

is during adolescence that individuals begin to form career preferences and invest in their academic achievement and skills (Steinberg, 2008). Especially in Germany, many students complete their secondary education at the age of 16 and apply for apprenticeships. Furthermore, pubertal changes occurring during adolescence force boys and girls to adapt to and accept their changing physical appearance. These changes are often psychologically consequential because one's worth in these domains has to be newly evaluated, negotiated, and built up (Erikson, 1968).

Adolescence as a Time of Change and Challenges

Given the reorganization that takes place during adolescence, adolescents are prompted to show increased introspection in order to find out who they really are (and want to be), how they are perceived by their environment, and what they want to do and achieve in their lives (Steinberg, 2005). It can lead to later maladjustment if this *process of scrutinization* is not successful and an unstable identity is being built up (Erikson, 1968; Harter, 2006). Thus, ignoring developmental trajectories in self-esteem during adolescence may neglect important aspects of an inherently dynamic construct (Greene & Way, 2005; Steinberg, 2005). Indeed, self-esteem has been shown to be especially malleable in adolescence (Demo, 1992; Steinberg, 2008; Trzesniewski et al., 2003). Furthermore, the relatively lower consistency of self-esteem during adolescence implies that it is more amenable to intervention during this developmental period (Robins, Trzesniewski, & Donnellan, 2012).

Taken together, it is important to consider adolescent change for several reasons: First, self-esteem and other personality traits are not entirely stable constructs but systematically change across the lifespan and especially during adolescence (e.g., Steinberg, 2008). Second, recent findings on the importance of studying change as a predictor revealed that change in certain personality domains influences important life outcomes. Third, malleability of self-esteem and personality traits allows for intervention programs within these constructs. If self-esteem is malleable during adolescence, practical interventions aimed at improving low self-esteem should be

considerably more effective than if we assume stability of this construct over time. Such findings would further highlight the importance of intervening early in the lifespan, so that individuals do not endure decades of greater risk for important life outcomes such as mental health problems. In this study, we therefore investigated the prospective effects of *level and change* in self-esteem across adolescence on depressive symptoms assessed two decades later, when study participants were 35 years old.

Self-esteem Level and Depression

Several theoretical models suggest predictions about the longitudinal association between personality characteristics such as self-esteem and depression (Klein, Kotov, & Buffered, 2011; Orth & Robins, 2012). First, one prominent theoretical model assumes that *level* of self-esteem is predictive for depression. The basic idea of the vulnerability model is that low self-esteem causally influences the onset and maintenance of depression (Beck, 1967; Metalski, Joiner, Hardin, & Abramson, 1993). This model assumes that individuals displaying dysfunctional attitudes or negative inferential styles about themselves are at greater risk for developing depressive symptoms. For example, when individuals with low self-esteem and thus dysfunctional attitudes towards themselves are confronted with negative feedback at work, they may think that their self-esteem depends on others' approval and thus feel worthless even after supportive criticism (Abramson, Metalsky, & Alloy, 1989; Beck, 1987).

Another mechanism could be that adolescents with low self-esteem are less likely to search for positive feedback from others (Cassidy, Ziv, Mehta, & Feeney, 2003). Furthermore, they may also use negative inferential styles after a failure. Negative inferential styles imply associating lack of success in a specific task with stable and global causes such as being generally incompetent instead of assuming that one was not successful at a specific task in a specific situation (Abramson et al., 1989). Hence, according to Beck's (1967) cognitive theory of depression, negative beliefs about oneself are a key cause in the etiology of depression. Several studies support the vulnerability

model (e.g., Franck, De Raedt, & De Houwer, 2007; Orth, Robins, & Roberts, 2008; Orth, Robins, Trzesniewski, Maes & Schmitt, 2009). For example, Orth et al. (2009) demonstrated that low self-esteem acts as a risk factor for depression but not vice versa. Finally, Bolognini, Plancherel, Bettschart, and Halfon (1996) showed that domain-specific self-evaluations, specifically perceived physical appearance and social skills, at age 12 and 14 were related to subsequent depressive mood, albeit with weaker effects than global self-esteem.[1]

Self-esteem Change and Depression

One unique feature of the present study is that we were able to test whether *change* in self-esteem predicts depression. To date, almost no research has been conducted on self-esteem change as a predictor of depression. However, considering psychological changes in the study of development is a key component in lifespan development theory (e.g., Baltes, Lindenberger, & Staudinger, 2006). Since there exist interindividual differences in intraindividual change, individuals may increase, decrease, fluctuate or remain stable in their intraindividual development (Alwin, 1994; Baltes, Reese, & Nesselroade, 1977; Mroczek & Spiro, 2003). Thus, individuals can differ with respect to the degree and direction of change (Mroczek & Spiro, 2005). We therefore assume that individual differences in change reveal substantial information that are relevant for later life outcomes because they reflect more or less successful adaptation to age-specific developmental tasks.

Indeed, adolescence has been characterized as a transitional period and a time of heightened self-exploration that *lays the foundation for later outcomes* (Erikson, 1968). Furthermore, it is often described as a vulnerable age period and thus a time of "(…) increased risk for the onset of a wide range of emotional and behavioral problems, including depression (…) Steinberg, 2005, p.69). Hence, due to the magnitude of change and the high number of challenges adolescents face, the adolescent years must be regarded not only as a transitional but also as a sensitive period that may lead to long-term consequences well beyond the adolescent years. In line with theory on adolescent

identity formation as a *prerequisite for later life adjustments*, adolescents who are not able to process age-specific challenges adequately might be more prone to later health issues such as depressive symptoms in adulthood compared to individuals who develop a positive attitude towards themselves.

Thus, although a positive prerequisite, we assume that it is not necessary to initially possess high self-esteem baseline level at the beginning of adolescence. Rather, we argue that an individual's process through adolescence might be equally important for later life outcomes. In this line of reasoning, even adolescents with generally high self-esteem may be at risk for depression later in life if they decline to moderate levels in self-esteem, or conversely, even individuals with quite low self-esteem can reduce their risk for negative life outcomes if they increase to moderate levels in self-esteem. We emphasize change because it might be crucial to face difficulties, perceive them as a challenge and then overcome these difficulties. Success experiences with developmental tasks might give adolescents a genuine trust in themselves as worthy and able persons and, in turn, enable them to approach later challenges in a more positive, constructive, and self-affirmative way.

The question remains as to the mechanisms by which decreasing self-esteem predicts depression (or increasing self-esteem prevents depression). One potential pathway may be that decreasing self-esteem leads to the deteriorating of positive beliefs about oneself, which in turn, predict depression. For example, a girl may enter adolescence with high self-esteem but due to pubertal changes in her body-weight she might experience insecurities with regard to her changing body image. Thus, she has to adapt to her feminine body image and accept these natural changes as part of becoming an adult. She might learn to define herself as a person of good qualities although her body image may not look as typically idealized in the media. Another girl with initial high level of self-esteem might not be able to cope with her natural gain in body weight during adolescence in an adaptive way, and thus experience increases in self-conscious thoughts, which, in turn, may deteriorate her initially high self-esteem in childhood.

Although previous research has documented that self-esteem is malleable during adolescence, very few studies investigated developmental change as a *predictor of life outcomes*. Zimmerman et al. (1997) demonstrated that individuals who decreased in self-esteem during their adolescent years were more prone to peer pressure, alcohol misuse, and tolerance for deviance during the four years of the study. Consistent with the vulnerability model, Kim and Chicchetti (2006) found that initial levels of self-esteem predicted changes in depression, whereas initial levels of depression did not predict changes in self-esteem. Finally, Bolognini et al. (1996) demonstrated that decreasing self-esteem – global and domain-specific – from age 12 to 14 was related to higher levels of depression at age 14. However, to date, no research has been conducted on the long-term consequences of adolescent self-esteem on adult depression over a time span of two decades.

In summary, we assume that not only initial level of self-esteem at the beginning of adolescence is relevant for later life outcomes but also how adolescent change during the age period between 12 and 16. Thus, adolescent trajectories of self-esteem development should provide prospective information for adult depression even when controlling for level of self-esteem in adolescence.

Normative Self-Esteem Development in Adolescence

In addition to examining the relation between self-esteem and depression, the present study also provides further insights into the normative development of self-esteem during adolescence. A large body of research suggests that self-esteem generally decreases across the adolescent years (Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002; Robins & Trzesniewski, 2005; Zimmerman et al., 1997). This adolescent drop in self-esteem has been discussed as a consequence of maturational changes (puberty), cognitive changes (formal operational thinking), and contextual changes (school transitions) (Trzesniewski, Robins, Roberts, & Caspi, 2003). Adolescents typically begin to see themselves in a more critical and differentiated way, displacing the overly positive and holistic self-views ("I'm a good kid") they maintained in childhood (Harter, 1999). This more

differentiated view of the self can lead to a drop in self-esteem because individuals have to integrate undesirable aspects of themselves into their self-concept. This process of integrating positive and negative characteristics should be resolved by the end of adolescence, leading to an increase in self-esteem at the beginning of adulthood (Robins & Trzesniewski, 2005).

Although the bulk of the evidence points to a drop in self-esteem during adolescence, there are some inconsistencies in the literature and several studies have found evidence for an increase (e.g., Demo, 1992; McLeod & Owens, 2004). Moreover, we know little about the developmental trajectory of domain-specific self-esteem during adolescence, and it is possible that the trajectory for these constructs diverges from that found for global self-esteem. Most important for the present study, the inconsistency in the findings suggests the presence of strong interindividual differences in self-esteem change, with some individuals showing increases, others showing decreases, and some showing no change at all. Thus, we expect to find interindividual differences in both the initial level and the developmental trajectory of self-esteem from age 12 to 16. The process of integrating positive and negative aspects of the self might differ largely between individuals. This difference could be a consequence of the number of challenges an adolescent has to cope with (i.e., a large or small increase in body weight, high or low academic prerequisites at school), and on the magnitude and the subjective experience of these challenges.

Previous research found gender effects with respect to self-esteem development. A meta-analytic review by Kling, Hyde, Showers, and Buswell (1999) revealed that males report higher self-esteem, on average, than females, with the largest gender gap observed during adolescence. The gender difference may be explained by divergent socialization experiences such as a tendency to give boys more autonomy than girls, different gender roles such as self-confidence being more valued in boys, or a stronger cultural emphasis on girls' physical appearance, together with idealized body images portrayed in the media, which may lead to lower self-esteem in girls (Kling et al., 1999).

The Present Study

The present study investigated adolescent level and change in self-esteem and examined their predictive effects on adult depressive symptoms two decades later. This study extends previous research on the relationship between self-esteem and depression in several ways. First, almost no research exists on *change* in self-esteem as a predictor of depression. Previous research has often relied on examining potential consequences of either high or low *level* of self-esteem, largely ignoring the potential consequences of *change* within these constructs. We thus investigated the independent prospective effects of level and change in self-esteem during adolescence on depressive symptoms at age 35. Second, no research has tested the long-term effects of adolescent self-esteem (level or change) on depression over decades. Previous research has relied on short-term longitudinal studies, examining the link between low self-esteem and depression over years rather than decades (cf. Sowislo & Orth, 2012)[2]. Instead, we tested the effects of adolescent self-esteem on adult depressive symptoms two decades later, spanning age 12 through to age 35 and thus, two different developmental stages. Third, most previous research has focused on global self-esteem and neglected domain-specific evaluations such as perceived physical appearance or academic competence. Since these domains are highly consequential during the transitional period of adolescence, we also tested models for these aspects of domain-specific self-esteem. Fourth, the present study uses data from a large, nationally representative sample for the used variables.

For this study, we first investigated level and change in global and domain-specific self-esteem during adolescence. Although most prior studies have found a mean-level decrease in self-esteem during adolescence, other studies have reported the opposite pattern, raising the possibility that we might find an increase, a decrease, or no change at all from age 12 to 16 years. More important, we expected to find substantial *individual differences* in level and change of self-esteem, suggesting that adolescents differ both in their initial level of self-esteem and in the shape and direction of their development. Second, we expected to find gender differences in self-esteem, with boys exhibiting

higher levels of global self-esteem and more positive perceptions of their physical appearance and academic ability. Third, we examined the prospective effects of both level and change in adolescent self-esteem on depressive symptoms in adulthood. We expected to replicate the vulnerability effect, such that adolescents with low self-esteem, and those showing declines in self-esteem over the course of adolescence, would be more prone to depressive symptoms two decades later.

To further clarify the prospective effects of self-esteem development on adult depression, we included three time-varying covariates: peer popularity, body mass index (BMI), and school grades (Cohen, Kasen, Chen, Hartmark, & Gordon, 2003). The rationale was as follows. According to the sociometer theory (Leary & Baumeister, 2000), global self-esteem can be regarded as a sociometer to monitor how much a person is valued by significant others. Thus, when members of desirable groups or social relationships value one's relational status as low, self-esteem should be low too. Indeed, research supports the assumption that peer popularity is related to higher self-esteem (e.g., Litwack, Aikins, Cillessen, 2012; Thomaes et al., 2010). As peers play an increasingly important role in adolescence, we included peer-rated popularity as a time-varying covariate (at all measurement occasions in adolescence) in our analyses to test for peer influences on global self-esteem (see Figure 1). For domain-specific self-esteem we included time-varying covariates that are directly linked to the respective domains. First, as previous research suggests a negative association between BMI and both perceived physical appearance and depression (O'Dea, 2006; Mustillo, Hendrix, & Schafer, 2012), we controlled for the potential influence of BMI when examining the effects of physical appearance on depressive symptoms. Second, as previous research demonstrates a positive association between academic achievement and perceived academic competence (Guay, Marsh &, Boivin, 2003; Marsh & Craven, 2006), we included the participants' school grades as an annual covariate when examining the effects of perceived academic competence.

Method

Participants

Data came from the German LifE-study (Fend, Georg, Berger, Grob, & Lauterbach, 2002).[3] Participants (N = 2,054) were assessed five times during adolescence at the age of 12 (T1: 1979), 13 (T2: 1980; N = 2,047), 14 (T3: 1981; N = 2,003), 15 (T4: 1982; N = 1,952), and 16 years (T5: 1983; N = 1,790). A follow-up assessment was conducted in adulthood when participants were 35 years old (T6: 2002). From the initial study participants, 74% (N = 1,527) participated at T6. The adolescent participants are broadly representative of the Western German population with regard to socioeconomic status, gender, ethnic origin, urban vs. rural place of residence, and education level (in Germany pupils are divided in separate school levels according to their academic performance in primary school) (see Fend, Berger, & Grob, 2009, for details). Study members who participated in the age 35 assessment did not differ from the original adolescent sample on any of the key variables of this study, including depressive symptoms at age 16, or global and domain-specific self-esteem at ages 12 to 16 (see Fend et al., 2009).

Measures

Global self-esteem. Self-esteem in adolescence was measured with eight items from the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1979). Participants rated each item on a dichotomous scale (0 = *disagree*, 1 = *agree*). The items were summed to create a total score (potential range: 0 to 8). Kuder-Richardson (1937) reliability estimates (KR-20) ranged between .72 and .77 for the five measurement occasions.

Domain-specific self-esteem: Physical appearance and academic competence. Each self-esteem domain was measured with six items. "Compared to others I'm pretty attractive" (perceived physical appearance) and "Even when trying hard, I can't achieve what others can do easily" (perceived academic competence). The items are conceptually comparable to the Perceived Competence Scale for Adolescents (PCS; Harter, 1982; Wünsche & Schneekind, 1989). Participants rated each item on a dichotomous scale (0 = *not true for me*, 1 = *true for me*). The items were

summed to create scores ranging from 0 to 6. The reliability estimates (KR-20) ranged from .65 to .72 for physical appearance and from .77 to .82 for academic competence.

Depression. At age 16 (T5: 1983), 13 items from the original Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) were used to measure depressive symptoms (depressive symptoms were not measured in the age 12 to 15 assessments). Participants were asked how often they had experienced depressive symptoms during the preceding week. Participants indicated which sentence out of four possible answers reflected their feeling most accurately. This was done for each of the 13 symptoms. An example item is "I'm not feeling sad at all" (1) to "I'm extremely sad and unhappy; I can hardly bear it" (4). The alpha reliability estimate was .89.

In adulthood (T6: 2002), seven items from the BDI-V (Schmitt & Maes, 2000) were used to measure depressive symptoms. Compared to the original BDI, the simplified version BDI-V only consists of 20 items (as opposed to the original version consisting of four gradually increasing sentences with regard to severity for each symptom). Comparison of the original scale with the new version revealed that both versions correlated equally high with self-reported depression and expert ratings of depression (Schmitt, Beckmann, Dusi, Maes, Schiller, & Schonauer, 2003). Furthermore, they discriminated depressed and non-depressed individuals equally well and the two versions had a high correlation both on the level of sum scores (r = .91) and on the level of symptoms (r = .70) (Schmitt et al., 2003). Thus, the different question formats revealed similar results. For T6 of the LifE-study, seven items of this simplified version of the BDI-V were used. In Appendix A, we provide an overview of the seven items that were extracted from the original 20-item scale of the BDI-V and the 13 items from the original BDI.

Participants were asked how often they typically experience depressive symptoms. Participants rated each item on a 6-point Likert-type scale (1 = *never*, 6 = *always*). Example items were "I'm sad," or "I'm thinking of hurting myself." The alpha reliability estimate was .84. The stability of

depression between age 16 and 35 was $r = .15$, $p < .01$. Only correlating the seven corresponding symptoms of the two scales revealed a stability of depression between age 16 and 35 of $r = .17$, $p < .01$.

Time-varying covariates. We controlled for three variables when examining the effects of self-esteem on depression. First, we controlled for peer popularity when examining the effect of global self-esteem. Peer popularity was rated through peers of the same school class. Pupils were given a complete list of their peers of their school class and they were instructed to read the list and then indicate a maximum of five peers that they liked the most. Thus, every adolescent received a sum score of his or her popularity (e.g., if an adolescent was listed three times as being liked, this pupil received the score "3"). On average, pupils received around three votes from their peers ($M_{T1\text{-}T5}$ ranged from 2.78 to 3.51, $SD_{T1\text{-}T5}$ ranged from 2.14 to 2.47) but variability in peer popularity was high, ranging from 0 to 18 for all measurement occasions.

Second, we controlled for body mass index (BMI) when examining the effect of perceived physical appearance. BMI, the individual's weight divided by the square of his or her height, was assessed at ages 13, 14, 15, and 16. Height and weight were measured using self-report categories (e.g., "height between 151-155 centimeters", or "weight between 46-50 kilograms"). We used the average estimate of each category (e.g., 153 centimeters for the category "height between 151-155 centimeters") as proxies in order to calculate the individual BMI.

Third, we controlled for the grades that participants had received during the five-year school period when examining the effect of academic competence. Participants indicated their grades at the ages of 12 to 16 years (1 = *lowest grade*, 5 = *highest grade*). Grades were measured at each measurement occasion in adolescence using the sum scores of the subjects Mathematics, German, and English (potential range: 3 to 15).

Plan of Analysis

We used second-order latent growth models (LGM) to test our hypotheses (Curran & Hussong, 2003; Duncan & Duncan, 1995). These models were used instead of standard latent growth models because unreliability of the measured items can lead to an underestimation of change. One of the advantages of second order latent growth modeling lies within the latent assessments of repeated measures instead of manifest variables. Because these models analyze change at the latent rather than at the observed level, this approach allows controlling for measurement error when analyzing structural relationships. We estimated LGMs over the five measurement occasions separately for global and domain-specific self-esteem, using Full Information Maximum Likelihood (FIML) estimation in Mplus 5.2 (Muthen & Muthen, 2008). We used two parcels (sum of 4 items for self-esteem, sum of 3 items for the domain-specific self-esteem) as indicators per constructs over time (see Figure 1). Parcels were built using the item-to-construct balancing method (Little, Cunningham, Shahar, & Widaman, 2002).

We followed the suggestions by Muthen and Muthen (1998-2010) to specify second-order latent growth curve models with multiple indicators. That is, factor loadings and intercepts of the corresponding indicators were constrained to be equal over time. Based on suggestions by Geiser (2011) we also specified an indicator specific effect for the second indicator (see Figure 1). This approach, in contrast to auto-correlating error variables of the same indicators (Lance, Noble, & Scullen, 2002; Cole & Maxwell, 2003), provides a way to statistically separate indicator specific effects and error variance. The traditional correlated-uniqueness-models (Lance et al., 2002), where errors of the same indicators are correlated, do not allow for this separation. Thus, error variance and indicator specific effects remain confounded which generally leads to an underestimation of the indicators (Eid, Schneider, & Schwenkmezger, 1999; see Geiser, 2011 for details).

We performed the analyses in three steps. First, we estimated level and change for global self-esteem and for the two self-esteem domains. In addition to average estimates, we were particularly interested in individual differences in level and change. Significant variance in level would indicate

that individuals differ in their initial levels of self-esteem whereas significant variance in change would suggest that adolescents differ in their developmental trajectory. Second, we examined gender effects on level and change in global and domain-specific self-esteem. Third, we investigated the predictive effects of level and change on depressive symptoms at age 16 and age 35 (see Figure 1). We included peer popularity as a time-varying covariate for global self-esteem, BMI as a time-varying covariate for perceived physical appearance, and school grades as a time-varying covariate for perceived academic competence (see Figure 1).

Results

Table 1 presents the means, standard deviations, and reliability estimates for the study variables. Table 2 includes the correlations between the three constructs and the test-retest correlations. The global self-esteem scale was moderately stable over time with correlations of .58 (age 12 to 13), .59 (age 13 to 14), .63 (age 14 to 15), and .58 (age 15 to 16), all $p < .001$. Test-retest correlations are only minimally lower to what is typically expected for global self-esteem in an adolescent sample (Trzesniewski et al., 2003). These slightly lower stability correlations may be due to the shorter version of the RSES used in this study, however, as research has shown, reasonable measures of self-esteem are even possible with a single item (Robins, Hendin, & Trzesniewski, 2001). The two self-esteem domains were moderately stable over time, both for the domain of academic competence [.52 (age 12 to 13), .58 (age 13 to 14), .57 (age 14 to 15) and .66 (age 15 to 16)] and for the domain of physical appearance [.52 (age 12 to 13), .65 (age 13 to 14), .69 (age 14 to 15), and .74 (age 15 to 16)] (see Table 2).

First, we estimated a latent growth model for each of the three constructs using five measurement points from age 12 to 16. Each model evidenced good fit: global self-esteem, $\chi 2$ (39) = 98.80, $p < .001$, CFI = .987, RMSEA = .032 (90% CI = .024-.040), physical appearance, $\chi 2$ (39) = 89.52, $p < .001$, CFI = .988, RMSEA = .029 (90% CI = .021-.037), and academic competence, $\chi 2$ (39) = 79.48, $p < .001$, CFI = .992, RMSEA = .026 (90% CI = .018-.034). Table 3 presents means,

variance estimates, and the level-change correlations for each of the three constructs. The results demonstrated increases in both global and domain-specific self-esteem across adolescence. Moreover, the variances of the level parameters were significant for all three constructs, indicating that participants differed in their initial levels of how positively they see themselves. More important, significant variances were found for each change parameter, suggesting individual differences in change. That is, participants differed in the shape and direction of their development.

For our second research aim, we included gender in the LGC models. Model fit continued to be good for all three constructs: global self-esteem, $\chi 2$ (46) = 109.81, $p < .001$, CFI = .987, RMSEA = .030 (90% CI = .023-.037), physical appearance, $\chi 2$ (46) = 100.65, $p < .001$, CFI = .988, RMSEA = .028 (90% CI = .020-.035), and academic competence, $\chi 2$ (46) = 91.94, $p < .001$, CFI = .991, RMSEA = .026 (90% CI = .018-.033). We found significant gender differences in self-esteem level; males reported higher levels of global self-esteem than females ($\beta = .21$, $p < .001$), as well as more positive perceptions of their physical appearance ($\beta = .22$, $p < .001$), and academic competence ($\beta = .22$, $p < .001$). However, no significant gender difference emerged for the change parameters. Thus, adolescent females have lower self-esteem than males but follow the same trajectory across adolescence.

Finally, for our main research aim, we estimated three separate second order LGC models to test the effects of level and change in self-esteem from age 12 to 16 on depressive symptoms at age 16 and 35. Table 4 and Figure 1 present the results of these analyses. As mentioned above, for global self-esteem we included peer popularity as a time-varying covariate and for physical appearance and academic competence we included BMI and school grades, respectively, as time-varying covariates. We also controlled for the effects of gender. Correlations between the domain-specific self-esteem of physical appearance and academic indicated that these constructs differ between individuals, revealing only small to medium-sized correlations (see Table 4).

We first tested the effects of global self-esteem development on depressive symptoms at age 16 and 35, with peer popularity as a time-varying covariate. The model fit well, χ^2 (159) = 278.94, p < .001, CFI = .984, RMSEA = .022 (90% CI = .018-.026). We found medium-sized effects of self-esteem level on depressive symptoms at age 16 and at age 35 (see Figure 1 and Table 4). Furthermore, self-esteem change had small to medium-sized effect on depressive symptoms at age 16 and at age 35, controlling for age 16 depressive symptoms (see Figure 1 and Table 4). Interestingly, the effect of self-esteem level remained similarly strong even twenty years after the measurement of self-esteem in adolescence, and even though we are predicting age 35 depressive symptoms controlling for age 16 depressive symptoms. These results were not affected by the inclusion of peer popularity as a time-varying covariate.

We next examined the effects of level and change in perceived physical appearance on depressive symptoms at age 16 and 35, with BMI as a time-varying covariate. Again, model fit was good, χ^2 (145) = 257.88, p < .0001, CFI = .983, RMSEA = .023 (90% CI = .018-.027).

Adolescents' perceptions of their physical appearance predicted depressive symptoms both at age 16 and at age 35; for depressive symptoms at age 35, we controlled for age 16 depressive symptoms (Table 4). Moreover, change in perceived physical appearance predicted depressive symptoms at age 16 and 35, controlling for age 16 depressive symptoms (Table 4). The inclusion of BMI as a covariate did not significantly alter these effects.

Our third model examined the effects of level and change in perceived academic competence on depressive symptoms at age 16 and 35, with school grades as a time-varying covariate. Model fit was good, χ^2 (156) = 216.10, p < .0001, CFI = .992, RMSEA = .016 (90% CI = .010-.021). Adolescents' perceptions of their academic competence predicted depressive symptoms at age 16 and 35, controlling for age 16 depressive symptoms (Table 4). Moreover, change in perceived physical appearance predicted depressive symptoms at age 16 and 35, controlling for age 16 depressive symptoms (Table 4). The inclusion of school grades did not significantly alter these

effects. Finally, we tested all these models without the inclusion of the time-varying covariates in order to see whether results differed in any way. However, all effects remained virtually identical (see Table 4).

One possible critique is the fact that two different measures of depression were used at age 16 (T5) and age 35 (T6). In order to address this critique, we extracted the conceptually equal seven items measured at T5 and T6 and additionally ran the same analysis as reported in this article using these overlapping items, revealing very similar results. Our model of self-esteem on depression using only these seven corresponding items again showed a satisfactory model fit χ^2 (375) = 920.91, p < .001, CFI = .947, RMSEA = .031 (90% CI = .028-.033) and results remained virtually identical. Again, we found medium-sized effects of self-esteem *level* on depressive symptoms at age 16 (β = -.41, p <.001) and at age 35 (β = -.36, p <.001). Additionally and equal to our original analysis, also self-esteem *change* had small to medium-sized effects on depressive symptoms at age 16 (β = -.40, p <.001) and at age 35 (β = -.21, p <.001). For this analysis, we tested the exact same model as our original model with the only change of excluding those items that had no corresponding items tested at age 35, thus we reduced the depression scale age 16 from 13 to those seven symptoms that were tested in the follow-up survey (T6) at age 35. Analysis for the two domains of self-esteem also evidenced virtually identical findings as to our original analysis.[4]

In summary, these findings demonstrate the power of positive self-esteem development to reduce risk for depressive symptoms both in adolescence and two decades later in adulthood.

Discussion

The primary aim of this study was to test the hypothesis that both level and change in self-esteem during adolescence predict depressive symptoms two decades later. Using prospective data over a 23-year time span collected from a large sample in Germany, three important findings emerged. First, we found significant increases in global self-esteem and in two self-esteem domains (i.e. perceived physical appearance and academic competence) across the adolescent years. The

question of how, and whether, self-esteem changes during adolescence has been discussed controversially. According to maturation theories (cf. Gecas, 2004; Harter, 1999), gains in physical, social, and cognitive competencies should promote increases in self-esteem. Another reason for an increase of self-esteem in this sample could be that – unlike in the USA – German pupils usually experience the transition to secondary school/high school earlier, at the age of 10 or 11. German pupils therefore might not experience the same academic stress during adolescence as American students do because this transitional period has already been processed. More important, we found significant variances for global and domain-specific self-esteem change parameters, indicating that adolescent self-esteem trajectories vary in shape and directions between individuals.

Second, we found gender differences in self-esteem levels, with males reporting more positive self-evaluations for all three constructs. This finding is consistent with current research on the relation between gender and self-esteem (e.g., Kling et al., 1999). For our third research aim, we tested the predictive effect of self-esteem level and change on adult depressive symptoms. In line with longitudinal research showing that low adolescent self-esteem level predicts a number of adult life outcomes, such as limited economic prospects and poor health (e.g., Trzesniewski et al., 2006), we found small to medium-sized effects of self-esteem level on depressive symptoms two decades later. Our findings support the notion that both adolescent global and domain-specific self-esteem level have predictive validity for important mental health outcomes in adulthood. This finding counters Baumeister, Campbell, Krueger, and Vohs' (2005) conclusion that self-esteem is not useful in predicting life outcomes. However, as pointed out by Baumeister et al., most studies have methodological problems such as small sample sizes or cross-sectional designs. We used both a large sample size and a long time span of 23 years to test these effects.

Most importantly, compared to earlier studies that focused on self-esteem *level*, we further found significant effects of self-esteem *change* on depressive symptoms at age 35 – over and above the effect of self-esteem level. Individuals who decreased in self-esteem during adolescence

exhibited more depressive symptoms two decades later, in adulthood. To date, change estimates have been underrepresented in studies of long-term life development. Prior studies have documented a significant link between low self-esteem level and depression (e.g., Orth et al., 2009). This study clearly advanced previous work by further revealing that it is not just level but also change in self-esteem that has predictive power for adult depression. Furthermore, we contributed to the literature by examining the self-esteem domains of perceived physical appearance and academic competence. These domains represent typical developmental tasks to the adolescent years as individuals have to adapt to physical and hormonal changes and choosing among career possibilities during that age period. We wanted to differentiate between facets of adolescent challenges in order to detect what exactly drives the association between low or decreasing self-esteem and adult depression. This knowledge helps us to better understand which domains of self-esteem contribute to the vulnerability effect and for whom low self-esteem is a risk factor for depression. Furthermore, such knowledge facilitates to design interventions. For example, decreasing self-esteem in perceived academic competence might call for a specific intervention program at school, targeting that particular domain of self-esteem which is about to develop into a risk factor for later depression.

Although the current study included a large sample size and a long time span to study the effects of adolescent development on adult life outcomes, several limitations should be noted. First, the measures were all based on self-reports. However, because self-esteem is by definition a subjective construct, it is impossible to measure it by objective criteria and consequently well-validated self-report scales are often considered the gold standard for assessing self-esteem (Robins, Trzesniewski, & Schriber, 2008; Sowislo & Orth, 2012). Furthermore, other methods of assessing self-esteem, such as implicit measures, have been criticized due to lack of validity (Buhrmester, Blanton, & Swann, 2011). In contrast, for depressive symptoms, it would be useful to include informant-based (e.g., clinician) measure to control for possible self-report biases (e.g., an

unwillingness to acknowledge the symptoms of depression) and to account for the effects of shared method variance on the associations between self-esteem and depression. Note, however, that shared method variance is unlikely to account for the effects of self-esteem on age 35 depression, because some self-report method variance has already been statistically removed by controlling for prior levels of depressive symptoms.

Another constraint concerns the measurement of depressive symptoms during adolescence. First, depressive symptoms were only collected at one measurement wave at age 16. This design did not allow us to test for effects of depressive symptoms on self-esteem as suggested by Rohde, Lewinsohn, and Seeley (1990). Therefore, we only tested the vulnerability model, which proposes that low self-esteem is a cause rather than a consequence of depression (e.g., Beck, 1987). However, the causal relationship between self-esteem and depression has been tested in a number of longitudinal studies, all indicating that self-esteem functions as a predictor of depression and not vice versa (e.g., Orth & Robins, 2012). Second, the adult measure of depressive symptoms in this study lacks diagnostic clinical value. In the follow-up survey, we were restricted to seven items indicating depressive symptoms. Thus, we can only relate self-esteem to a continuum of symptoms of depression without being able to clinically diagnose major depressive disorder, since this scale does not define a cut-off value to diagnose depression. Hence, it may be necessary in future studies to include clinical measurement tools in order to predict major depressive disorders as a consequence of self-esteem development.

Furthermore, it would be valuable to have the same measure of depression in adolescence and adulthood. Depression was assessed more state-like at age 16 (original BDI) compared to a more trait-like measure at age 35 (simplified version of BDI; BDI-V). Note however, that the BDI-V scale is developed on the basis of the original BDI. Furthermore, the two scales have been compared extensively by Schmitt et al. (2003), clearly showing high convergent validity and a similar pattern of external correlates, confirming that they have a similar nomological network.

Ideally, however, the two scales would be assessed and compared over time to see if they behave identically. Future studies might address this issue. Related to this, the question remains whether depression should be defined and assessed as a state-like or trait-like construct. Clinical psychologists usually define depression as a state-like construct whereas personality psychologists conceptualize depression having both state and trait components. As shown in a study using longitudinal modeling of depression scores across adolescence and adulthood, most of the variance in depression is due to a trait and not to a state component (Cole & Martin, 2005). One further possible critique is that using a trait-like measure of depression at age 35 might cause an increase of the association between adolescent self-esteem and depression. Note, however, that the correlation spans two decades from adolescence when individuals experience considerable changes in their personality and/or affect, to adulthood.

A further issue should be mentioned with respect to domain-specific self-esteem. We used the two domains self-esteem of appearance and academic competence because they are central to adolescent experiences. How adolescents see themselves in terms of academic competence can be crucial when applying for a job. In Germany, at the age of 16, many students finish school and apply for apprenticeships. We believe that these experiences are important challenges and represent some of the major developmental tasks during adolescence. The self-esteem domain of perceived physical appearance was integrated in our analysis because adolescence brings along a number of physical changes such as changes in body weight and height or hormonal changes and body maturation. Changes in body image need to be accepted in order to find a good attitude towards oneself. As we have seen, both self-esteem domains play indeed a critical role for life outcomes. However, even though the chosen self-esteem domains are highly important, future studies could additionally test other domains of self-esteem. Indeed, one should consider to integrating domains of self-esteem such as perceived interpersonal skills. It is during adolescence, that individuals typically start to build up stable outerfamilial relationships such as peer friendships or first romantic

relationships. Therefore, these social changes in the environment might affect how adolescents see themselves with regard to interpersonal skills and, in turn, could be predictive of long-term life outcomes. Having succeeded in building up and maintaining social relationships during adolescence might be another important root of adaptive adjustment later in life.

Future studies might also consider to include classical personality traits such as neuroticism as a third variable as neuroticism might explain some of the variance in the prediction of depressive symptoms in adulthood. Unfortunately, we were unable to include personality measures as they were not measured in the present study. However, we controlled for prior levels of depression in all our models, which is a central component of the neuroticism/negative affectivity construct that has been discussed as empirically overlapping with low self-esteem and depression (cf. Watson, Suls, & Haig, 2002).

Finally, future studies might extend our research by including moderator variables. For example, it could be that an individual's school grades differ from his/her perception of academic competence and it would be interesting to see if a discrepancy between the subjective perception and the objective evidence leads to maladaptive outcomes. By including moderators we might be able to uncover even more complex associations between self-esteem and mental health.

Overall, this study provides one of the first long-term findings of effects of adaptive self-esteem development during adolescence on long-term health outcomes in adulthood. To the best of our knowledge, no other study tested for effects of adolescent development within a timeframe of over twenty years. We could reveal that not only adolescent self-esteem level but also self-esteem change plays a crucial role in the prevention of depressive symptoms still two decades later. These results provide a basis for interventions in enhancing self-esteem during adolescence – thus, during an age period when self-esteem is especially malleable.

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Footnotes

1. Although the vulnerability model assumes that low self-esteem is a cause of depression, it is also possible that it is a consequence of depressive symptoms (see Rohde, Lewinsohn, & Seeley, 1990). This alternative model, typically referred to as the "scar" model, could not be tested in the present study because self-esteem was not assessed in adulthood. However, the scar model has been extensively tested in other studies and the prospective effect of depression on self-esteem is typically small or non-existent (Sowislo & Orth, 2012).
2. One exception is the study by Schafer, Wickrama, and Keith (1998), who found adult self-esteem level predicting depression in a small sample of 98 married couples over 13 years. However, this study only included two measurement occasions and did not focus on adolescent development as a predictor of adult depression.
3. Lebensverläufe von der späten Kindheit ins frühe Erwachsenenalter (LifE). Die Bedeutung von Erziehungserfahrungen und Entwicklungsprozessen für die Lebensbewältigung – Follow-Up zur Konstanzer Jugendlängsschnittstudie ‚Entwicklung im Jugendalter' (Authors: Fend, Georg, Berger, Grob & Lauterbach, 2002). [Pathways from Late Childhood to Adulthood. Context and Development in Adolescence as Predictors of Productive Life-Courses (*L*ebensverläufe *i*ns *f*rühe *E*rwachsenenalter: LifE)].
4. Additionally to the model of global self-esteem on adult depression using only the seven corresponding depression items, we also conducted new models for the two self-esteem domains. Model fit of the self-esteem of physical appearance (SPA) *with only the seven corresponding depression items at age 16 and 35* was well too, χ^2 (355) = 809.90, $p < .001$, CFI = .953, RMSEA = .029 (90% CI = .026-.032) and also our findings remained virtually identical. Again, we found small to medium-sized effects of self-esteem *level* on depressive symptoms at age 16 (β = -.27, p <.001) and at age 35 (β = -.21, p <.001). Additionally and equal to our original analysis, also self-esteem *change* revealed significant effects on

depressive symptoms at age 16 (β = -.18, p <.01) and at age 35 (β = -.13, p <.05). In all our models we controlled for depression at age 16 on depression at age 35, again revealing a small effect from age 16 to 35 (β = .14, p <.01). The same was true for the adapted model of self-esteem of academic competence (SAC). We again only included the *seven corresponding depression items at age 16 and 35*. Model fit was well, χ^2 (375) = 847.01, p < .001, CFI = .955, RMSEA = .029 (90% CI = .026-.031) and again, results remained virtually identical compared to our original model. We again found small to medium-sized effects of self-esteem *level* on depressive symptoms at age 16 (β = -.43, p <.001) and at age 35 (β = -.13, p <.01). Additionally and equal to our original analysis, also self-esteem *change* revealed significant effects on depressive symptoms at age 16 (β = -.30, p <.001) and at age 35 (β = -.16, p <.01). Again, depression at age 16 has a small effect on depression at age 35 (β = .12, p <.05).

Table 1

Descriptive Statistics and Reliability Estimates (KR-20) for Global Self-Esteem and Domain-Specific Self-Esteem

	T1: 12 years		T2: 13 years		T3: 14 years		T4: 15 years		T5: 16 years	
	M (*SD*)	KR-20	*M* (*SD*)	KR-20	*M* (*SD*)	KR-20	*M* (*SD*)	KR-20	*M* (*SD*)	KR-20
Self-esteem[a]	5.66	.73	5.48	.72	5.74	.77	5.89	.77	6.05	.77
	(1.97)		(2.12)		(2.10)		(2.09)		(2.02)	
Physical appearance[b]	3.78	.65	3.87	.69	4.03	.72	4.07	.72	4.18	.72
	(1.68)		(1.75)		(1.76)		(1.76)		(1.73)	
Academic competence[b]	4.22	.77	4.33	.79	4.63	.80	4.69	.79	4.82	.82
	(1.86)		(1.87)		(1.77)		(1.73)		(1.72)	

Note. N = 1,527. [a] Scale ranged from 0 to 8; [b] Scale ranged from 0 to 6.

Table 2

Correlations between Global Self-Esteem and Domain-Specific Self-Esteem

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
T1															
1. SE	—														
2. SPA	.597	—													
3. SAC	.504	.315	—												
Peer Popularity	.144	.175	.124												
Body Mass Index[a]	-	-	-												
School grades	.085	.090	.312												
T2															
4. SE	.578	.422	.353	—											
5. SPA	.447	.518	.292	.597	—										
6. SAC	.399	.249	.523	.508	.403	—									
Peer Popularity				.123	.105	.078									
Body Mass Index				-.092	-.222	-.078									
School grades				.112	.017	.245									
T3															
7. SE	.512	.384	.299	.585	.513	.384	—								
8. SPA	.419	.474	.177	.421	.654	.339	.605	—							
9. SAC	.341	.203	.423	.391	.333	.576	.529	.436	—						
Peer Popularity							.091	.125	.036						
Body Mass Index							-.052	-.164	-.029						
School grades							.032	-.030	.194						
T4															
10. SE	.454	.385	.272	.522	.448	.317	.626	.455	.460	—					
11. SPA	.382	.366	.227	.435	.589	.286	.489	.690	.295	.583	—				
12. SAC	.271	.188	.373	.306	.224	.448	.377	.347	.570	.511	.346	—			
Peer Popularity										.044	.064	.109			
Body Mass Index										-.083	-.097	-.025			
School grades										.047	-.032	.233			
T5															
13. SE	.348	.267	.201	.465	.383	.255	.530	.418	.364	.582	.471	.377	—		
14. SPA	.334	.385	.175	.417	.571	.286	.491	.681	.277	.529	.740	.374	.596	—	
15. SAC	.232	.128	.301	.309	.216	.413	.331	.304	.563	.432	.304	.659	.460	.369	—
Peer Popularity													.066	.052	-.027
Body Mass Index													.011	-.156	.050
School grades													.035	-.069	.205

Note. SE = global self-esteem, SPA = self-esteem of physical appearance, SAC = self-esteem of academic competence, [a]Body Mass Index was not measured at T1. All correlations are significant, $p < .01$. The three different gray colors indicate stability coefficients; dark grey (= SE), middle grey (= SPA), light grey (= SAC).

Table 3

Model Estimates from the Latent Growth Models for Global Self-Esteem and Domain-Specific Self-Esteem

	Level		Change		
	M	*Variance*	*M*	*Variance*	$r_{L,C}$
Self-esteem	3.59***	.642***	.301***	.031***	-.401***
Physical appearance	2.99***	.450***	.192**	.021***	-.319***
Academic competence	2.92***	.517***	.377***	.036***	-.416***

Note. N = 1,527. $r_{L,C}$ = correlation between level and change.

**p < .01, ***p < .001.

Table 4

Level and Change in Global Self-Esteem and Domain-Specific Self-Esteem as Predictors of Depression at Age 16 and 35

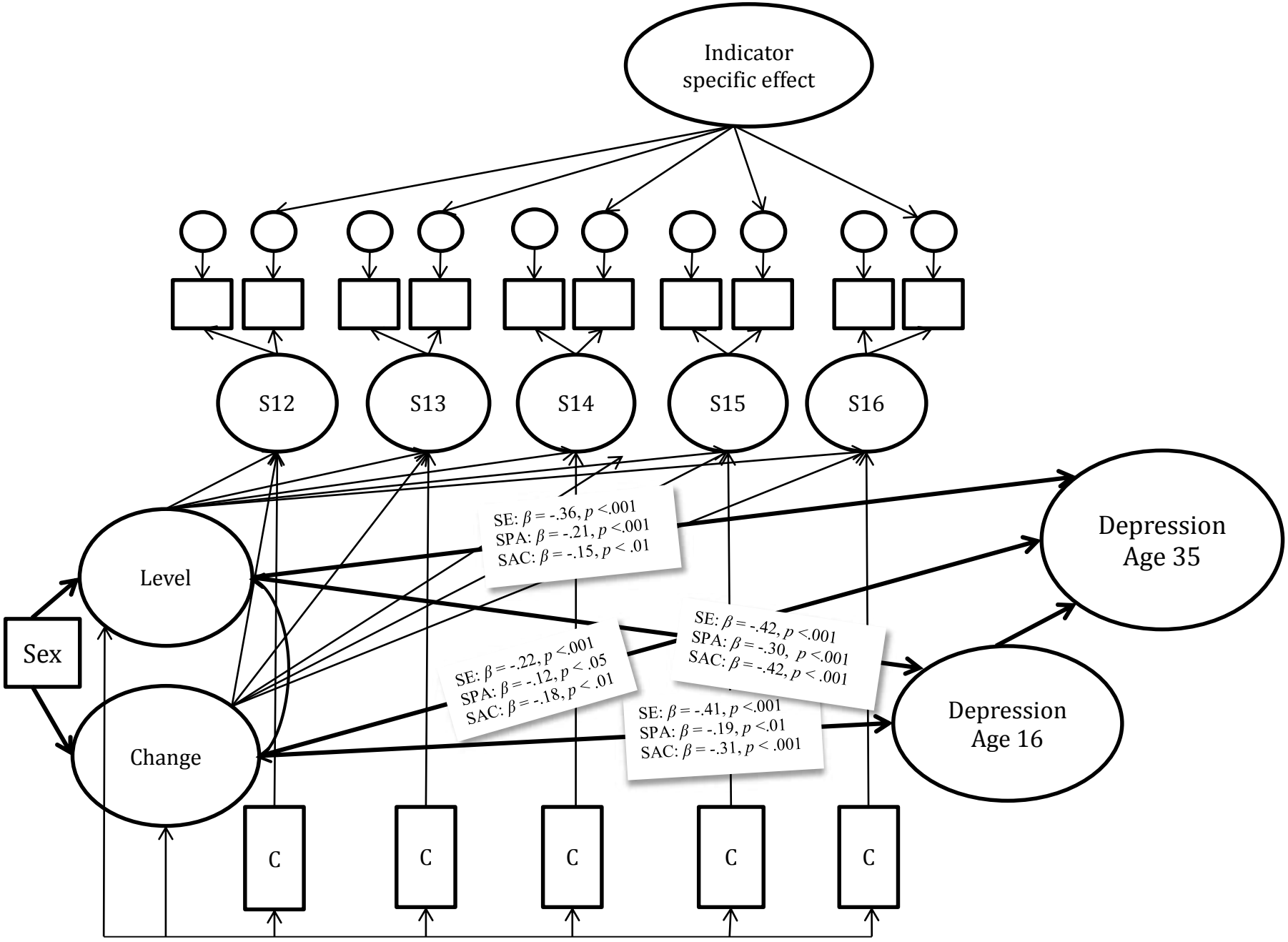
Predictors	Depression age 16[1]	Depression age 35[1]
With covariates		
Peer popularity, body mass index & school grades		
Self-esteem level	-.42***	-.36***
Self-esteem change	-.41***	-.22***
Physical appearance level	-.30***	-.21***
Physical appearance change	-.19**	-.12*
Academic competence level	-.42***	-.15**
Academic competence change	-.31***	-.18**
Without covariates		
Self-esteem level	-.41***	-.35***
Self-esteem change	-.40***	-.22***
Physical appearance level	-.29***	-.21***
Physical appearance change	-.20**	-.11
Academic competence level	-.43***	-.15**
Academic competence change	-.31***	-.15**

Note. N = 1,527. [1] Standardized beta coefficients from the latent growth curve models.

*p < .05, **p < .01, ***p < .001.

Figure Captions

Figure 1. Second order latent growth curve model for self-esteem (labeled S12 to S16 for each of the three measured models) and the prediction of depressive symptoms at age 16 and 35. The time-varying covariates (labeled C) for global self-esteem are peer popularity and for the domain-specific self-esteem (i.e., perceived physical appearance and academic competence) body mass index and school grades, respectively. Main results are presented for global self-esteem (SE), domain-specific self-esteem of academic competence (SAC) and perceived physical attractiveness (SPA).


Indicator
specific effect
S12
S13
S14
S15
S16
Level
Sex
Change
C
C
C
C
C
SE: β = -.36, p <.001
SPA: β = -.21, p <.001
SAC: β = -.15, p < .01
SE: β = -.22, p <.001
SPA: β = -.12, p < .05
SAC: β = -.18, p < .01
SE: β = -.42, p <.001
SPA: β = -.30, p <.001
SAC: β = -.42, p < .001
SE: β = -.41, p <.001
SPA: β = -.19, p <.01
SAC: β = -.31, p < .001
Depression
Age 35
Depression
Age 16

Appendix A

13 Items of the LifE-study, *age 16,* based on the original BDI (Beck et al., 1961), Scale ranges from 0 (first sentence) to 3 (last sentence)	BDI-V Schmitt & Maes (2000), Scale ranges from 0 (=never) to 5 (=almost always)	Items of LifE-study, *age 35* Scale ranges from 0 (=never) to (=almost always), based on BDI-V
I do not feel sad. I feel sad. I am sad all the time and I can't snap out of it. I am so sad and unhappy that I can't stand it.	I feel sad.	Yes
I am not particularly discouraged about the future. I feel discouraged about the future. I feel I have nothing to look forward to. I feel the future is hopeless and that things cannot improve.	I feel discouraged about the future.	Yes
I do not feel like a failure. I feel I have failed more than the average person. As I look back on my life, all I can see is a lot of failures. I feel I am a complete failure as a person	I feel like a failure.	No
I get as much satisfaction out of things as I used to. I don't enjoy things the way I used to. I don't get real satisfaction out of anything anymore. I am dissatisfied or bored with everything.	It's hard for me to enjoy things.	No

I don’t feel particularly guilty. I feel guilty a good part of the time. I feel quite guilty most of the time. I feel guilty all of the time.	I feel guilty.	No
I don’t feel I am being punished. I feel I may be punished. I expect to be punished. I feel I am being punished.	I feel punished.	No
I don’t feel disappointed in myself. I am disappointed in myself. I am disgusted with myself. I hate myself.	I’m disappointed in myself.	Yes
I don’t feel I am any worse than anybody else. I am critical of myself for my weaknesses and mistakes. I blame myself all the time for my faults. I blame myself for everything bad that happens.	I am critical of myself for my weaknesses or mistakes.	No
I don’t have any thoughts of killing myself. I have thoughts of killing myself, but I would not carry them out. I would like to kill myself. I would kill myself if I had the chance.	I have thoughts of killing myself.	Yes
I don’t cry any more than usual. I cry more now than I used to.	I cry.	No

I cry all the time now. I used to be able to cry, but now I can't cry even though I want to.		
I am no more irritable than usual. I am more irritable than usual. I am much more irritable than usual. I am irritable all the time.	I feel irritable and upset.	No
I have not lost interest in other people or activities. I am less interested in other people or things in the past two weeks. I have lost most of my interest in other people or things. It's hard to get interested in anything.	I have lost my interest in other people.	Yes
I make decisions about as well as ever. I find it more difficult to make decisions than usual. I have much greater difficulty making decisions than I used to. I have trouble making any decision.	I find it difficult to make decisions.	No
I do not think I look any worse than usual. I worry about my looks. I feel I have changed in a way that makes me look ugly. I'm ugly.	I worry about my looks.	No
I can work as well as ever. It's hard to start working. I have to force myself into doing things. I'm unable to work.	I have to force myself into doing things.	Yes

I have not experienced any change in my sleeping pattern. I sleep somewhat more OR less than usual. I sleep a lot more OR less than usual. I sleep most of the day OR I wake up 1-2 hourse early and can't get back to sleep.	I have sleeping problems.	No
I am no more tired or fatigued than usual. I am more tired or fatigued more easily than usual. I am too tired or fatigued to do a lot of things I used to do. I am too tired or fatigued to do most of the things I used to do.	I am tired and fatigued.	Yes
I have not experienced any change in my appetite. My appetite is somewhat less than usual OR somewhat greater than usual. My appetite is much less than usual OR much greater than usual. I have no appetite OR I crave food all the time.	I have no appetite.	No
I have as much energy as ever. I have less energy in the past two weeks. I don't have enough energy to do very much. I don't have enough energy to do anything.	I worry about my health.	No
I have not noticed any recent change in my interest in sex. I am less interested in sex than I used to be. I am much less interested in sex now. I have lost interest in sex completely.	I have lost interest in sex.	No